

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-15. (Canceled)

16. (Original) An immersion sensor for measuring the concentration of at least one analyte with the aid of an oxidase, wherein said immersion sensor comprises said oxidase in an enzyme region covered by an analyte-impermeable material and connected to the surface of the sensor via at least one channel which contains water and is permeable to the analyte, but due to its geometry limits diffusion.

17. (Original) The immersion sensor as set forth in claim 16, wherein the enzyme region contains water.

18. (Currently Amended) The immersion sensor as set forth in claim ~~16~~ 17, wherein the at least one channel comprises an at least one diffusion-limiting channel and leads through impermeable material of the immersion sensor.

19. (Currently Amended) The immersion sensor as set forth in claim 17, wherein said at least one ~~diffusion-limiting~~ channel is filled, on or near the surface of the sensor, with a porous substance which is impermeable to proteins.

20. (Original) The immersion sensor as set forth in claim 17, wherein on the surface of the sensor, the channel passes into a protein-impermeable, hydrophilic layer and/or the channel cross-section is larger than in the diffusion-limiting part.

21- 23. (Canceled)

24. (New) The sensor according to claim 16, wherein the sensor is configured such that the analyte diffuses into the enzyme region.
25. (New) The sensor according to claim 16, wherein the enzyme region is an enzyme layer.
26. (New) The sensor according to claim 25, wherein the enzyme layer is covered on at least one side by a thin, analyte-impermeable, oxygen-permeable membrane having no analyte window.
27. (New) The sensor according to claim 26, wherein in an area limiting flow, a length of the channel exceeds a thickness of the membrane.
28. (New) The sensor according to claim 26, wherein the enzyme layer borders an inner gas space of the sensor from within.
29. (New) The sensor according to claim 28, wherein the inner gas space is connected to an oxygen reservoir.
30. (New) The sensor according to claim 28, wherein a thin oxygen-permeable membrane is situated between the enzyme layer and the inner gas space.
31. (New) The sensor according to claim 28, wherein the enzyme layer is bound onto or into a swollen, porous, hydrophilic wall of a hollow fiber with a gas-filled lumen.
32. (New) The sensor according to claim 16, wherein the channel forms the only way of transporting analyte to the enzyme.
33. (New) The sensor according to claim 16, wherein a diffusion resistance of the analyte is determined by a ration of a length of the diffusion path and a cross-section of the diffusion path.

34. (New) The sensor according to claim 16, wherein a length of the channel is between 0.1 mm and 1 mm.

35. (New) The sensor according to claim 16, wherein an increased effective cross-section of the channel on a surface of the sensor leads to a leveling out of outer concentration gradients thereby reducing the effect of outer deposits on diffusion flow.

36. (New) The sensor according to claim 16, wherein the channel passes into a hydrophilic, porous and protein-excluding layer.

37. (New) The sensor according to claim 16, wherein the channel leads through a water-impermeable material and at a surface of the sensor is filled with a defined hydrophilic porous substance.